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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,151	01/11/2006	Kazuhiro Obae	1830.1017	6110
21171 7590 12/22/2010 STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005				
EXAMINER				
KASSA, TIOABU				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/564,151

Applicant(s)

OBAB ET AL.

Examiner

TIGABU KASSA

Art Unit

1619

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 13-19, 24 and 27 is/are pending in the application.
- 4a) Of the above claim(s) 1-6 and 16-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-15, 24 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Request for Continued Examination

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/07/10 has been entered.

Formal Matters

Applicant's amendment filed 10/07/2010 is acknowledged and entered due to request for continued examination. **Claims 1-6, 13-19, 24 and 27 are pending. Claims 13-15, 24, and 27 are under consideration in the instant office action.** Claims 1-6 and 16-19 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claims. Claims 7-12 and 20-23 and 25-26 are cancelled. Claim 27 is newly added.

Withdrawn Rejection

All rejections applied in the previous office action are hereby withdrawn as a result of applicant's claim amendment filed on 10/29/2010.

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Corrected Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). Applicant's claim of foreign priority to JP 2003-273176 is DENIED because no translation of the Japanese language document has been provided. Benefit is accorded to PCT/JP04/09841, filed on 07/09/04.

New Claim Rejections – Necessitated by Amendment

Claim Rejections - 35 USC § 112, First Paragraph

Written Description – New Matter

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 27 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection. The incorporation of the recitation “in a pressure less than

atmospheric pressure” is not described and incorporated in the original disclosure. The original disclosure has support for “under reduced pressure” in paragraphs 0042 and 0068. The examiner contends that “reduced pressure” can be interpreted in many ways since applicants did not define the phrase with a point of reference in the original disclosure. Therefore, “reduced pressure” does not constitute support for the recitation of “in a pressure less than atmospheric pressure”.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(e) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness

All prior art references have been cited previously in the record except Van Soest et al., (WO 00/40617, published on July 13, 2000).

Claims 13-15, 24, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baensch et al., (US Patent 5759581, published on June 2, 1998) and Van Soest et al., (WO 00/40617, published on July 13, 2000) as evidenced by Kesselmans et al., (US Patent No. 6822091, published on November 23, 2004).

Applicant Claims

Applicants claim a method for producing functional starch powder which comprises: heat-treating a starch raw material at 100 to 130°C in a pressure reduced to 600 mm Hg in the case of instant claim 13 and in a pressure less than atmospheric pressure in the case of newly added; heating the starch raw material in the presence of water at 60 to 150°C to swell starch particles of the starch raw material, and subsequently drying the swollen starch particles to obtain a powder mixture comprising starch particles with a particle size of 50 to 500 µm and amylose and amylopectin which are present in the exteriors of these starch particles, wherein the properties of the starch powder are as recited in the claims. The dependent claims thereof recite the starting raw material is potato starch.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

Baensch et al., teach a food grade texture agent in the form of thermally stabilized swelling resistant and non crystalline particles of high amylose starch, which present a gelled soft structure, in which the amylose content of the starch is between 40 and 70%, and in which 90% of the particles have a diameter in the range of 5 to 30 microns (see abstract). Baensch et al., in column 2, lines 22-44 teach **a process for the preparation of the above-defined food grade texture agent, which comprises the steps of suspending the high amylose starch in water, heating the slurry thus obtained at about 90 to 100 °C, preferably 95-100 °C, under continuous controlled stirring without shearing, but sufficient to avoid particle aggregation and so as to form the aimed particle gel product, and then cooling said product.** The stirring must effectively be such that a high shearing is avoided which could destroy the particles. However, the stirring has to be sufficient to avoid particle aggregation during the heat treatment and to thus allow the stabilization of the particle structure. Preferably, the process includes a second heating step up to 40 to 80 °C. **The above process can be advantageously carried out under a pressure of about 0.3 bar (which the examiner notes that is lower than atmospheric pressure).** Each step of this process can be of about 30 min. for the first heating up to 95-100 °C, maintaining said temperature during about 30 min., cooling the product obtained up to about room temperature within about 25 min., further heating said product up to 40-80 °C within about 15 min., and cooling it again within about 5 min. to room temperature. The average diameter of the particles is of about 15mm, whereas the particles size distribution is such that 90% of the particles have a diameter in the range of about 5 to 30 microns (column 2, lines 52-55).

Baensch et al., teach that the product can also further be dried to powdered form to be reconstituted in water, for example either by freeze-drying and milling or by spray-drying (column 2, lines 62-64).

Baensch et al., teach a process for preparing a food texture grade texture agent comprising: a) suspending a high amylose starch having an amylose content ranging from 40 to 70% in water so as to obtain a slurry which is free of added enzymes; b) heating the slurring of step a to a temperature of about 80 to 100 °C with continuous controlled stirring without shearing so as to form a particle gel product which is non crystalline and resistant to swelling up to 120 °C; and c) cooling said particulate gel product of step b) to room temperature to form a cooled particulate gel product (claim 8). The heating of the slurry of step b) is carried out under a pressure of about 0.3 bar and at least about 95 °C (claim 9). The process further comprises the steps d) heating the cooled product of step c) to about 40 to 80 °C to obtain a reheated particulate gel product; and e) cooling the reheated particulate gel product of step d) to room temperature (claim 10). The process further comprising the step d) drying the cooled particulate gel product of step c) to a powder (claim 12).

Baensch et al., teach that as starting products for the preparation of the aimed particular starch, two different kinds of native high amylose starch have been used, i.e. "Eurylon VII" containing 70% amylose and "Amaizo 2568F" containing 45-50% of amylose (column 5, lines 9-14). Other products have been used in this example, such as native potato starch, wheat starch and rice starch (from Sugro AG, Basel, Switzerland), etc., (column 5, lines 15-23). With regard to the amount of amylose and amylopectin the examiner incorporates Kesselmans et al., as

evidentiary reference to prove that for example potato starch granules isolated from potato tubers usually contain about 20% amylose and 80% amylopectin (wt. % on dry substance) in column 3, lines 1-4. Baensch et al. teach regarding the particles size distribution, the results obtained with "Eurylon" are as follows: starting product (Eurylon): 90% between about 2 and 15 microns (about 10% < 2 microns), after first heating step: 90% between 6 and 60 microns, and particulate starch of the invention: 90% between about 5 and 30 microns (about 10% > 30 microns). Furthermore, with regard to the limitation that the amylose and amylopectin in the functional starch powder is present on the exteriors of the starch particles since the process that is taught by Baensch et al., is substantially similar steps and uses the same ingredients required by the instant invention the amylose and amylopectin on the starch particles of Baensch et al., would necessarily be present on the exteriors of the starch particles. This limitation would be inherently present in the product of Baensch et al.

The examiner notes that the first and second heating temperatures are taught by Baensch et al., in overlapping manner. It must be noticed that since Baensch et al., teach substantially similar steps as the instantly claimed process water retention capacity, collapse time, and gel indentation load are necessarily similar and would be inherent of the product.

**Ascertainment of the Difference between Scope the Prior Art and the Claims
(MPEP §2141.012)**

Although Baensch et al., teach a food grade texture agent in the form of thermally stabilized swelling resistant and non crystalline particles of high amylose starch, which present a gelled soft structure, in which the amylose content of the starch is between 40 and 70%, and in which 90% of the particles have a diameter in the range of 5 to 30 microns (see abstract),

Baensch et al., do not explicitly teach starch particle sizes as recited in amended claim 13 and new claim 27. This deficiency is clearly cured by the teachings of Van Soest et al.

Van Soest et al., teach a method for the preparation of starch particles in a two-phase system comprising the steps of a) a preparation of the first phase comprising dispersing the starch in water b) preparation of a dispersion or emulsion of the first phase in a second liquid phase c) crosslinking of the starch present d) separating the starch particles (see abstract). **Starch particles of very small particle size can be produced in controlled manner by means of this method** (see abstract). Van Soest et al., on page 7, lines 17-20 teach as follows:

The particle size of these particles is between 50 nm and 100 μm . The particle size is dependent on, inter alia, starch and cross-linking agent type and concentration, reaction time and the type of non-solvent. This method as well offers the advantage that the particle size can be adjusted by adjusting the process conditions, including the various components.

Van Soest et al., teach starch particle sizes in overlapping manner.

**Finding of Prima Facie Obviousness Rationale and Motivation
(MPEP §2142-2143)**

It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Baensch et al. by preparing starch particles in sizes of 50-500 μm because starch particles of such sizes are clearly commonly known in the art as also demonstrated by Van Soest et al. One of ordinary skill in the art would have been motivated to prepare starch particles of such sizes because it is within the purview of the skilled artisan to prepare starch particles having sizes of 50-500 μm . Furthermore, Van Soest et al., as delineated

above teach that the particle size of can be adjusted by adjusting the process conditions including various components which is a fact that holds true in the art of microparticle and nanoparticle art. With regard to the heating temperature ranges and particle sizes of the starch powder, in the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). Similarly, a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). Furthermore, differences in concentration will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration is critical. “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). A skilled artisan would have had a reasonable expectation of success in combining the teachings of Baensch et al., and Van Soest et al., because both references teach the preparation of starch microparticles. With regard to applicant's claim amendment in claim 13 reciting that the first heat treatment of the starch raw material at 100 to 130 °C in a pressure reduced to 600 mm Hg (0.8 bar) Baensch et al., teach **a process for preparing a food texture grade texture agent comprising: a) suspending a high amylose starch having an amylose content ranging from 40 to 70% in water so as to obtain a slurry which is free of added enzymes; b) heating the slurring of step a to a temperature of about 80 to 100 °C with continuous controlled stirring without shearing so as to form a particle**

gel product which is non crystalline and resistant to swelling up to 120 °C; and c) cooling said particulate gel product of step b) to room temperature to form a cooled particulate gel product (claim 8). The heating of the slurry of step b) is carried out under a pressure of about 0.3 bar and at least about 95 °C (claim 9). The process further comprises the steps d) heating the cooled product of step c) to about 40 to 80 °C to obtain a reheated particulate gel product; and e) cooling the reheated particulate gel product of step d) to room temperature (claim 10). The process further comprising the step d) drying the cooled particulate gel product of step c) to a powder (claim 12). The examiner takes the position that

0.3 bar clearly meets the limitation of claim 27 reciting that the heating is performed in a pressure less than atmospheric pressure. Additionally, it must be noticed that absent of evidence to the contrary the examiner takes the position that the methods of Baensch et al., wherein the first heating is performed at 0.3 bar would result to similar product to that of the heating at 0.8 bar as applicant recited. Therefore, with the showing of the reference, the burden of establishing non-obviousness by objective evidence is shifted to the Applicant.

In light of the forgoing discussion, one of ordinary skill in the art would have concluded that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a).

Therefore, the invention as a whole was prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIGABU KASSA whose telephone number is (571)270-5867. The examiner can normally be reached on 9 am-5 pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne P. Eyler can be reached on 571-272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tigabu Kassa

12/16/10

/Cherie M. Woodward/
Primary Examiner, Art Unit 1647